Before the
Federal Communications Commission
Washington, DC 20554

In the matter of	)	
Amendment of Parts 73 and 74 of the	)	
Commission's Rules to Establish Rules	)	
for Digital Low Power Television,	)	MB Docket No 03-185
Television Translator, and Television	)	
Booster Stations and to Amend Rules	)	
For Digital Class A Television Stations.	)	

PETITION FOR RECONSIDERATION

This Petition has been prepared by and submitted on behalf of Byron W. St. Clair. I am an engineering consultant regularly engaged in conducting LPTV and TV translator interference studies and preparing FCC applications for these types of stations. The following request is based on my specific experience relating to interference studies.

Introduction

The Report and Order in this Docket[1] adopts an assumed vertical pattern to be used in the analysis of interference caused by LPTV and TV translator stations. For any depression angle below horizontal the relative voltage is presumed to be twice the corresponding value in the OET Bulletin 69 table.[2]

The use of the "one size fits all" vertical pattern will result in a substantial overstatement of the "Effective Radiated Power" at the vertical angles most significant in interference calculations.

Further the OET Bul 69 tabulation stops at 0.75° below horizontal. Realistic values are needed up to 0° and indeed above 0° because beam tilting is used in many LPTV and TV translator antennas.

In practice the maximum of the vertical pattern is frequently depressed to an angle between 1° and 2°. This serves to present overshooting the served area as well as protecting distant stations.

As a practical solution, which will improve the accuracy of the interference calculations without introducing undue complexity it is requested that five representative vertical patterns be adopted. An applicant would specify the pattern that closet matches the proposed antenna.

The proposed patterns are:

1) Very low vertical gain such as yagi or log periodic antennas (specify as "no vertical pattern".)

[1] FCC 04-220 Adopted September 9, 2004 at ¶104.
[2] Office of Engineering and Technology Bulletin 69, Table 8.

2) Low vertical gain based on two panel antennas vertically stacked (specify as "low gain vertical pattern".) Useable for 1, 2 or 4 vertically stacked panels.
3) Medium vertical gain based on a typical eight bay slot, but useable for four, eight or 10 bay slot antennas (specify as "medium gain vertical pattern".)
4) High vertical gain based on a typical sixteen bay slot but useable for twelve or sixteen bay antennas (specify as "high gain vertical pattern".)
5) Very high vertical gain based on a typical twenty four bay slot antenna but useable for twenty to thirty two bay antennas (specify as "very high gain vertical pattern".)

Relative values above 0° (above horizontal) are needed when a downtilt is specified so the resulting value on the horizon is available. The patterns in practice are nearly symmetrical about 0° and values on the upper side should be included in the tabulation in the computer database.

The patterns are tabulated with no downtilt. The applicant should specify the downtilt. The V-Soft interference analysis program (Probe) already includes the capability to specify the downtilt. It should be a completely routine matter to similarly include the capability to accommodate a specified downtilt in the FCC's interference analysis program.

As vertical angles below about 7.5° have virtually no significance in interference calculations the patterns are tabulated only down to 7.5°. It is proposed that the value at 7.5° be used at any greater depression angle. The values are not taken below 0.2 relative voltage to accommodate null fill.

Respectfully submitted,

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Appendix 1

Very Low Vertical Gain – The relative voltage should be considered 1.0 at all vertical angles.

Low Vertical Gain

Elevation	Field		Elevation	Field
0.0	1.0		4.0	.89
025	1.0		4.25	.88
0.5	1.0		4.5	.87
0.75	.99		4.75	.86
1.0	.98		5.0	.84
1.25	.98		5.25	.83
1.5	.97		5.5	.81
1.75	.97		5.75	.80
2.0	.96		6.0	.78
2.25	.96		6.25	.77
2.5	.95		6.5	.76
2.75	.94		6.75	.74
3.0	.93		7.0	.72
3.25	.93		7.25	.70
3.5	.92		7.5	.68
3.75	.91			

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Medium Vertical Gain

Elevation	Field		Elevation	Field
0.0	1.0		4.0	.57
0.25	.99		4.25	.52
0.5	.99		4.5	.47
0.75	.98		4.75	.43
1.0	.97		5.0	.38
1.25	.95		5.25	.33
1.5	.93		5.5	.28
1.75	.91		5.75	.24
2.0	.88		6.0	.2
2.25	.85		6.25	.2
2.5	.81		6.5	.2
2.75	.78		6.75	.2
3.0	.74		7.0	.2
3.25	.7		7.25	.2
3.5	.66		7.5	.2
3.75	.61			

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High Vertical Gain

Elevation	Field		Elevation	Field
0.0	1.0		4.0	.2
0.25	.99		4.25	.2
0.5	.97		4.5	.2
0.75	.93		4.75	.21
1.0	.88		5.0	.22
1.25	.81		5.25	.22
1.5	.74		5.5	.21
1.75	.65		5.75	.2
2.0	.56		6.0	.2
2.25	.47		6.25	.2
2.5	.38		6.5	.2
2.75	.28		6.75	.2
3.0	.2		7.0	.2
3.25	.2		7.25	.2
3.5	.2		7.5	.2
3.75	.2			

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Very High Vertical Gain

Elevation	Field		Elevation	Field
0.0	1.0		4.0	.2
0.25	.97		4.25	.2
0.5	.93		4.5	.2
0.75	.85		4.75	.2
1.0	.74		5.0	.2
1.25	.61		5.25	.2
1.5	.47		5.5	.2
1.75	.33		5.75	.2
2.0	.2		6.0	.2
2.25	.2		6.25	.2
2.5	.2		6.5	.2
2.75	.2		6.75	.2
3.0	.2		7.0	.2
3.25	.21		7.25	.2
3.5	.22		7.5	.2
3.75	.2			

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